

**QUALITY AND QUANTITY OF DOMESTIC WASTEWATER  
STUDIES AND EFFECTIVENESS OF SEWAGE TREATMENT  
PLANT AT SEBERANG PERAI JAYA, PERAI**

By

**MOHD IZZHAM BIN ISMAIL**

Report is submitted as  
the requirement for the degree of  
**Bachelor Engineering (Hons) (Civil)**

**UNIVERSITI TEKNOLOGI MARA  
MARCH 2006**

## **DECLARATION**

I Mohd Izzham Bin Ismail, 2003194212 confirm that the work is my own and that appropriate credit has been given where reference has been made to work of others.

---

( Mohd Izzham Bin Ismail )  
9 April 2006

## ACKNOWLEDGEMENT

Firstly, I would like to thank God for providing for me in every way now and during my research.

I would like to thank my supervisor, Miss Caroline Marajan, for her support and help throughout this project. She spent so much of her precious time tirelessly guiding me through the months, and I wish to acknowledge the debt I owe her with a million thanks

Also, appreciation is extended to Noraini Binti Suliman for her hard work in continuously working with me, helping me with all the information she shared. Noraini was always willing to help out with researching and visiting the authorities to gain information throughout the project.

A thousand thanks to Indah Water Konsortium Sdn. Bhd. especially to Miss Lim Pek Boon from IWK Planning and Engineering Department for providing all the data required for these studies.

A great deal of gratitude is owed to Puan Zarinah Bahari and Puan Nor Aziah Adnan whom provided us the opportunity to used the Malaysian Standard in conducting this thesis. Without them, finding the right standards for this thesis purpose would have been much more difficult and time consuming.

Finally, I would like to thank my family and friends for supporting me through my graduate studies. Without them, the many hours I spent would have been much more difficult. Specifically, I would like to thank my parents for supporting me in my pursuit of a graduate bachelor in civil engineering (honors).

## **ABSTRACT**

Wastewater generation is something that we should pay more attention to as every individuals and almost everything produce waste such as domestic waste and industrial waste. Since Malaysia is experiencing rapid population growth, the needs to evaluate the quality and quantity of domestic wastewater and the effectiveness of a sewage treatment plant is ought to be necessary.

These studies will focused on studying the quality and quantity of domestic wastewater including the effectiveness of a treatment plant which is situated at Seberang Perai Jaya. From the data of influent and effluent obtained from Indah Water Konsortium, the analysis of the quality, quantity and the effectiveness of the domestic wastewater studies will be made.

It will be based on the effluent standard from the Department of Environment and in this case, the parameters involved in identifying all the requirements is basically BOD, SS, COD, pH and Ammonia.

Based on the effluent standard and the Malaysian Standards Code for the Practice for Design and Installation of Sewerage Systems, which is MS 1228, the determination of quality whether it is normal or not, comply with standards or not and whether it is effective or not, can be done subsequently.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the Study

Malaysia is experiencing rapid population growth, cities expansion and industrial development. This inevitably leads to a large amount of wastewater generation (both domestic and industrial), which if not treated properly will seriously threaten the environment.

Many treatment plants are currently under-performing and are unable to produce treated effluents that would meet the Malaysian discharge limits. As well as being the result of plant over-loading and non-optimum operation, this is also due to inadequate understanding of the treatment process details.

These studies should be helpful to a introduce a broad sector of government, private-sector, academic, non-government, and community leaders to the fundamental planning concepts and considerations required to establish or expand a domestic wastewater management program.

It is essentials to identify the current problems and situations so that we can find the solutions that based on analysis and forecasting and by identifying the typical issues and information relevant to environment and social.

These studies will be a comprehensive profile of a program planning and a valuable source of information for planning future needs of wastewater treatment plant. It can be use by national, provincial, and local governments in program development, planning, and management activities.